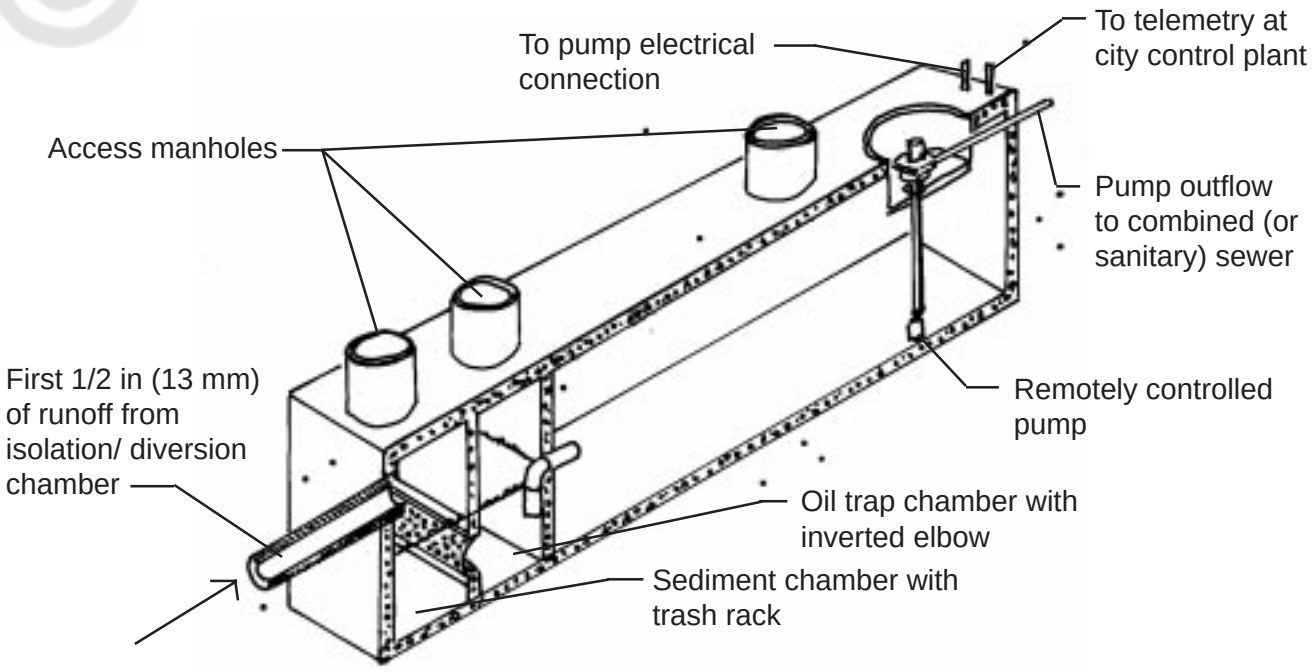
PRIMARY USE: Collect and store stormwater runoff to allow a controlled release into a treatment system or the environment.
ADDITIONAL USES: Water quality volume (WQV) storage tanks may be applied in other situations where WQV runoff will not be routed into the storm sewer (e.g., landscape irrigation systems or "gray water" toilet flushing systems).

WATER QUALITY VOLUME STORAGE TANK

What is it? A storage tank for collecting and storing stormwater runoff from a specific site for later transfer to appropriate BMP treatment methods.

Purpose

Used to prevent sewer overflow into streams and used for periods when inflow and infiltration are taxing the capacity of the associated treatment method.



Water Quality Volume Storage Tank
Section View

Limitations

The storage volume will only contain the amount for which pre-installation estimates were made. Therefore, if proper analysis is not conducted for predicting the amount of first flush stormwater runoff, inadequate storage may occur.

Materials

Prefabricated tanks or vaults fabricated on site from concrete. Also, used are connection plumbing materials, a pump, and control/monitoring system.

Installation

WQV storage tanks should be used on all developments or redevelopments that require a BMP within combined sewer watersheds. The system should ensure that none of the WQV escapes while combined sewer overflows are occurring into streams or in periods when inflow and infiltration are taxing the capacity of the wastewater treatment plant.

Source: Warren Bell, *A Catalog of Stormwater Quality Best Management Practices for Heavily Urbanized Watersheds.* National Conference on Urban Runoff Management: Enhancing Urban Watershed Management at the Local, County, and State Levels, March 30 to April 2,1993.

WATER QUALITY VOLUME STORAGE TANK

Additional Considerations:

This approach conforms to EPA's August 19, 1989, National Combined Sewer Overflow Strategy, which requires establishment of a high-flow management plan that maximizes the capacity of the combined sewage system for storage and treatment.

The method simply incorporates a storage tank into an off-line system of runoff control. Either single or multiple tanks may be employed. Once the water is collected, the stored water is released into the combined or sanitary sewer system by telemetry-controlled pumps or automatic valves. Some tanks have a water quality inlet to provide sediment and petroleum hydrocarbon removal before the runoff is allowed to enter the storage tank. The inlet must be pumped out and refilled with clean water every 6 months for proper functioning.

When WQV water is discharged directly into a combined or sanitary sewer or used in gray-water flushing systems, the pollutant removal efficiency of the system becomes that of the receiving wastewater treatment plant. The phosphorus removal capacity of such plants is typically in the 95-100 % range. When the WQV water is reused and retained on site for landscape irrigation, pollutant removal may approach 100 % if the water is not allowed to escape from the site.

Source: Warren Bell, *A Catalog of Stormwater Quality Best Management Practices for Heavily Urbanized Watersheds.* National Conference on Urban Runoff Management: Enhancing Urban Watershed Management at the Local, County, and State Levels, March 30 to April 2,1993.